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REVIEWS AND ABSTRACTS OF LITERATURE

Five pamphlets by JULIUS PIKLER: *Das Beharren und die Gegensätzlichkeit des Erlebens* (Stuttgart, 1908), *Über Theodor Lipps' Versuch einer Theorie des Willens* (Leipzig, 1908), *Zwei Vorträge über Dynamische Psychologie* (Leipzig, 1908), *Über die biologische Funktion des Bewusstseins* (Bologna, 1909), *Die Stelle des Bewusstseins in der Natur* (Leipzig, 1910).

The author of these interesting pamphlets here outlines his mechanistic theory of consciousness and conduct, and a most ingenious, original theme it is. Professor Pikler believes that all psychologists have gone astray. Their first step is the fatal one; they investigate sensation qualities, feeling qualities, the details of imagery, memory, and the like. But none of these has any important significance, either in the actual practise of the person experiencing them or in a scientific understanding of psychic life. Not in the lowest, broken flutterings of mentality, but in its highest development and in its broadest sweep and tendency, do we catch some true glimpse of its nature. We should accordingly look to the thought processes as they take place, not as shaped by the exigencies of any one moment, but as they go on in all manners of crises and habitudes. If we do this we shall, the author believes, discover that expectation is the fundamental psychic fact; that it depends not in the least upon *specific* sense qualities, but solely upon the opposition and dynamic exclusion of one quality by another.

What is the character of this opposition? Is it a logical one, as Hegel would have said? Not at all; it is purely physical at bottom. It is, we might add, not merely an intellectual distinction; it is a polarizing tendency in the world-stuff itself which gives rise to all intellectual distinctions. Professor Pikler finds in this polarity the origin of consciousness, an explanation of perception, and a mechanistic theory of inductive reasoning. Every influence affecting the nervous organism tends to persist therein, and some quality of it always succeeds in doing so; if, now, an opposite influence operates, consciousness results, *and with consciousness the unrestricted belief in the universal reality of the particular content.* This belief is pure expectancy. Says Professor Pikler:

> Das als erstes objektiv daseiende Glied eines Systems zu einander gegensätzlicher Gegenstände wird in jener seiner Qualität, welche es zu den anderen Gliedern gegensätzlich macht, bewusst nicht erlebt; es hinterlässt dennoch eine Tendenz zum Erleben (Weitererleben) und Erwarten desselben. Ist nämlich später ein gegensätzliches Gliedobjektiv da, so wird in folge dieser Änderung auf einmal die Tendenz zum Weitererleben des erstern Gliedes und im Gegensatz dazu, als Überraschung, das Erleben des Gegengliedes, bewusst. Jenes Glied eines Systems, welches als erstes objektiv da war, tritt also zuerst in der besiegten Tendenz und daher als Vorstellung ins Bewusstein.

If, he says, one has always heard only second-rate pianos, read only inferior poets, breathed only city air, and lived strenuously, one senses the tone of a good piano as soft, Goethe as thoughtful, mountain air as refreshing, and rational living as peaceful; *but without ever having previously sensed previously heard pianos as metallic, or the inferior poets as thoughtless, or city air as depressing.*

Perception is brought to pass by the simultaneous cooperation of a physical event which corresponds to the existence of the object that is perceived and the physical residuum of an earlier and *opposite* physical event. The purely objective physical resistance to a purely objective physical tendency to repeat (or persist) yields perception. Thus consciousness arises out of purely physical elements. This does not mean that physical energy is consumed in the making of consciousness; the fact is, consciousness is nothing but the resistance to a transformation of physical energy.

If perception is physical, so, too, is thought. It is only the releasing of an objective, physical tendency to repetition (in the thinker's body); this tendency being now freed from the restraint of an opposite one. Now, work is done only by the release of energy; and *so it is that thought determines conduct,* for thought delivers physical tendencies from resistance, it sets them free and thereby sets up motions in the body.

This smacks of radical intellectualism, and certainly it runs counter to most pragmatic doctrines, which generally look upon consciousness as a peculiarly trying incident in the course of behavior, not as the origin of behavior. Professor Pikler seems, in fact, almost anti-empirical in his complete rejection of the efficiency of specific sensory qualities. He plainly has his own variety of "pure thought" (mechanical though it be), which somehow decides actions, now thus, now so, in supreme indifference to all that the pragmatist would describe as the important concrete details of a situation.

> Für die biologisch so wichtige Funktion unserer Wahrnehmungen, dass sie uns auf Grund einfacher Induktion . . . die Bedingungen von Tatsachen lehren, ist ihr absoluter Inhalt ganz gleichgiltig, ist eben nur das erforderlich, dass sie Gegensatz, Ausschliessung aufweisen, diese dynamische Wirksamkeit besitzen.

And, he adds by way of elucidation, if instead of heat and cold we had, in all cases where we now sense these, wholly different *qualia,* we might still predict when the soup on the stove would boil, provided only that the new *qualia* were opposites. Hence, psychologists are guilty of a serious misdirection when they confine themselves to a study of the absolute contents of sensation and perception, neglecting their profounder contrariety or mutual exclusiveness. For *sensation and perception have a biological function only in so far as they indicate the overcoming of contraries and thereby enable us to draw distinctions and to recognize situations.* Recognition is a fundamental fact of psychic life, for upon it all inference, intuition, and analysis rest.

But is it not curious that the author quite misses the fact that blue is the opposite of yellow just because blue is blue and yellow is yellow? Or, to generalize, that a quality *A* has *an* opposite and dynamic excluder, rather than two or a million, just because of its own complete specificity? The oppositional relation can be established only between complete specificities; the simple exclusiveness which we find between the members of a dichotomy, for instance, will never produce the great variety of conscious situations which we actually find. Thus, to become conscious of a triangle, I must have, on Professor Pikler's theory, a previously established inner determination or tendency of a "contrary" physical object; but this "contrary" object can not be *any* non-triangular one, for that would mean that a sound or a flavor or a perfume, or any conceivable object without three sides, would all be equally efficient as "contraries." Were they, though, Professor Pikler's account of the origin of consciousness would fail altogether, inasmuch as anything could be a sufficient pre-condition for the experiencing of anything else.

But suppose we do admit that the specific sensory quality is necessary to fix the contrary one; now we must ask the writer to go a step further and say that every specific quality of which we can be aware has its own specific contrary. Then arises an empirical difficulty which will, I fear, prove insuperable: it is as old as Aristotle, but age can not level it. What is the contrary of an isosceles triangle with a two-inch base and four-inch sides? What is the contrary of the letter "q," what of the three-beat rhythm at the rate of 40, what of the timbre of a certain violin in Munich?

Professor Pikler's interpretation of mechanical resistance and "freedom" is not lightly to be dismissed; for in it are the germs of a wholly new hypothesis about the psychophysical. He points out that resistance and freedom are not data in quite the same sense that heat, light, and motion are; they are, as it were, existent only inside the very tendencies to motion themselves. To be sure, we can sense resistance, but only in ourselves, *i. e.,* only when some parts of our own bodies are pressed or pulled. The resistance or freedom in an external object can not be communicated; and *in this respect they are precisely like consciousness.* Again, resistance and freedom are connected with energies (exclusively), but they are not energy. For, if they were energy, then energy would have to disappear whenever a resistance increased. But energy never disappears, though resistance and freedom do constantly fluctuate. It is clear, then, that the latter are, in some manner, correlates of energy patterns. And here again they resemble consciousness remarkably; for nothing is more obvious to introspection than that consciousness is not energy, while we are equally sure, through physiological and physical inquiries, that consciousness is established by energies in *some* mode of their behavior, though energy is never transformed into consciousness. In a third manner, now, mechanical resistance and freedom resemble consciousness; for, while they are not energy, they are an internal feature of its disposition and, as such, *determine the course of events.* And fourthly resistance and freedom can not be located exclusively in the moving object nor yet outside of it. They belong to the reciprocal action of the internal and the external; in them we find conditions outside of the inner tendencies being taken up into the tendencies (adaptation, organic change, modifying of impulses and ideas); and conversely, the tendencies make themselves felt in the field beyond their origin (reconstruction of an objective situation).

Professor Pikler is hot on the trail of some important interpretations, but he seems to be pressing toward them without due regard for empirical details. When criticizing current psychology, he is at his best; when defending mechanistic philosophy, he is powerful. But, before accepting his hypothesis of oppositions, which underlies his whole structure, the reviewer would like to have Professor Pikler tell him just what qualities (physical objects) do operate in antithetical pairs to effect consciousness. Lacking such information, Professor Pikler's readers will not be convinced.

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Manual of Mental and Physical Tests. GUY MONTROSE WHIPPLE. Baltimore: Warwick and York. 1910. Pp. ix + 534.

The preparation of such a volume as the present is a task for the performance of which all users of the methods of experimental psychology should feel a considerable debt of gratitude. What is attempted is to review something over fifty of the more established experimental methods, to epitomize the more important results obtained with them, and to formulate a standard procedure for their future conduct. The author's "Problemstellung" is an excellent one, insisting on the necessity of adopting intercomparable methods of investigation, while fully recognizing the tentative character of any catalogue of tests on the basis of present experience. After brief chapters on the handling of statistical data and anthropometric measurements, the book devotes some sixty pages to the motor functions, about ninety to the sensory, and nearly three hundred to those of the higher mental processes. This proportion is more understandable when one bears in mind the endeavor to avoid technical complications as far as possible, and the fact that the development of tests without special apparatus has been much greater on the side of the intellectual functions than elsewhere. The same consideration might well account for such an omission as that of simple reaction time, though not so well for the omission of one like Crampton's test of condition,[1] whose place is not adequately filled by the mere spirometer test, which preserves the name of a measure of "vital capacity." The author's confidence in dynamometric measurements seems to be rather greater than the reviewer's, though the objections are all taken into account. On the sensory side, oculomotor control receives considerable attention. One regrets to find no consideration of the McCallie audiometer, which was apparently designed with special reference to testing at the ear itself, and avoiding the errors involved in the ordinary use of electric current. Sensibility to pain is probably a matter for "experiment" rather than "test" in the sense in which the author distinguishes between these two terms, but there can be little question of the value of the pressure balance principle as here elaborated, both for pressure and pain sense.

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[1] "A Test of Condition: Preliminary Report," *Medical News*, September, 1905.